LOCAL MONOMIALIZATION OF A SYSTEM OF FIRST INTEGRALS OF DARBOUX TYPE

Given a real- or complex-analytic singular foliation $\mathcal{F}$ with $n$ first integrals of Darboux type $(f_1, \ldots, f_n)$, we prove that there exists a local monomialization of the first integrals. In particular, if $\mathcal{F}$ is generated by the $n$ first integrals, the foliation $\mathcal{F}$ is reduced to monomial singularities.